

Title	Pregnancy-specific stress, fetoplacental haemodynamics, and neonatal outcomes in women with small for gestational age pregnancies: a secondary analysis of the multicentre prospective observational trial to optimise paediatric health in intrauterine growth restriction
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Supplementary Table 1: Differences between Current Study Sample and Remaining PORTO Cohort

	Remaining PORTO Cohort (n=785)	p
<i>Maternal Characteristics</i>		
Deprivation Index score	0.61 ± 11.93	.596
Height (cm)	162.46 ± 6.62	.905
Weight (kg)	63.51 ± 13.11	.461
BMI	24.06 ± 4.71	.473
Age (years)	29.96 ± 6.11	.846
GA at enrollment in PORTO (w)	30.31 ± 3.85	.003
Diastolic blood pressure	68.46 ± 9.35	.139
Systolic blood pressure	112.67 ± 12.96	.048
European ethnicity	626 (79.8)	.044
Spontaneous conception	771 (98.2)	.130
Smoker	185 (23.6)	.827
Drinker	15 (1.9)	.912
Preeclampsia	81 (10.3)	.035
<i>Infant Characteristics</i>		
Birthweight (g)	2466.92 ± 665.34	.014
GA at delivery (w)	37.69 ± 3.05	.016
Preterm (<37 w)	197 (25.1)	.103
Late/moderately (32- <37 w)	144 (18.3)	
Very (28- <32 w)	38 (4.8)	
Extremely (<28 w)	15 (1.9)	
Admitted to NICU	235 (29.9)	.023
Adverse perinatal outcome	46 (5.9)	.079
Apgar score at 1 minute	8.49 ± 1.26	.176
Apgar score at 5 minutes	9.43 ± 0.92	.001
Abnormal UA PI (IUGR)	288 (36.7%)	.957
AEDF	54 (6.9)	.601
GA at AEDF diagnosis	28.80 ± 3.65	.505
Abnormal MCA PI	320 (50.3)	.087
Abnormal CPR	139 (22.1)	.999

Supplementary Table 2: Pregnancy-Specific Stress and Abnormal Maternal-Fetal Hemodynamics

	Unadjusted Model		Adjusted Model[‡]	
	n	OR (95% CI)	n	OR (95% CI)
<i>Abnormal Umbilical Artery Pulsatility Index</i>				
23-28 weeks	80	0.965 (0.911-1.022)	74	0.961 (0.898-1.029)
Concerns about Birth and the Health of the Baby	81	0.973 (0.885-1.069)	75	0.970 (0.868-1.083)
Concerns about Physical Symptoms and Body Image	82	0.874 (0.718-1.065)	76	0.870 (0.691-1.094)
Concerns about Relationships and Emotions	80	0.835 (0.669-1.041)	74	0.802 (0.612-1.052)
29-34 weeks	195	1.002 (0.962-1.044)	175	0.994 (0.949-1.042)
Concerns about Birth and the Health of the Baby	201	1.022 (0.957-1.091)	181	1.000 (0.926-1.080)
Concerns about Physical Symptoms and Body Image	203	0.889 (0.777-1.018)	183	0.896 (0.771-1.042)
Concerns about Relationships and Emotions	201	1.000 (0.867-1.154)	181	0.998 (0.852-1.168)
35-40 weeks	199	1.005 (0.963-1.050)	182	0.992 (0.946-1.040)
Concerns about Birth and the Health of the Baby	197	1.049 (0.982-1.121)	180	1.036 (0.961-1.116)
Concerns about Physical Symptoms and Body Image	203	0.876 (0.756-1.016)	185	0.826 (0.696-0.979)*
Concerns about Relationships and Emotions	204	0.968 (0.829-1.130)	186	0.945 (0.799-1.117)
<i>Abnormal Middle Cerebral Artery Pulsatility Index</i>				
23-28 weeks	55	1.038 (0.967-1.115)	52	1.057 (0.969-1.153)
Concerns about Birth and the Health of the Baby	56	1.089 (0.962-1.233)	53	1.136 (0.976-1.324)
Concerns about Physical Symptoms and Body Image	56	1.089 (0.845-1.351)	53	1.109 (0.842-1.462)
Concerns about Relationships and Emotions	55	1.013 (0.791-1.298)	52	0.999 (0.734-1.360)
29-34 weeks	144	1.058 (1.007-1.111)*	130	1.073 (1.012-1.137)*
Concerns about Birth and the Health of the Baby	148	1.100 (1.018-1.188)*	134	1.143 (1.037-1.260)**
Concerns about Physical Symptoms and	150	1.219 (1.040-	136	1.283 (1.070-

Body Image		1.428)*		1.538)**
Concerns about Relationships and Emotions	146	1.037 (0.877-1.225)	132	1.030 (0.851-1.247)
35-40 weeks	128	1.007 (0.951-1.066)	117	0.978 (0.911-1.049)
Concerns about Birth and the Health of the Baby	125	1.010 (0.928-1.100)	114	0.967 (0.870-1.075)
Concerns about Physical Symptoms and Body Image	131	1.155 (0.954-1.400)	119	1.032 (0.813-1.309)
Concerns about Relationships and Emotions	131	0.957 (0.775-1.183)	119	0.924 (0.715-1.195)

Abnormal Cerebroplacental Ratio

23-28 weeks	55	0.985 (0.910-1.067)	52	0.987 (0.893-1.092)
Concerns about Birth and the Health of the Baby	56	1.030 (0.902-1.176)	53	1.023 (0.872-1.200)
Concerns about Physical Symptoms and Body Image	56	0.802 (0.591-1.090)	53	0.814 (0.533-1.241)
Concerns about Relationships and Emotions	55	0.932 (0.703-1.236)	52	0.905 (0.606-1.353)
29-34 weeks	141	1.043 (0.979-1.112)	127	1.051 (0.972-1.138)
Concerns about Birth and the Health of the Baby	145	1.071 (0.969-1.183)	131	1.076 (0.946-1.225)
Concerns about Physical Symptoms and Body Image	147	1.058 (0.865-1.294)	133	1.091 (0.856-1.391)
Concerns about Relationships and Emotions	143	1.059 (0.854-1.312)	129	1.105 (0.846-1.445)
35-40 weeks	127	0.998 (0.906-1.099)	116	0.968 (0.845-1.108)
Concerns about Birth and the Health of the Baby	124	1.090 (0.941-1.262)	113	1.076 (0.897-1.292)
Concerns about Physical Symptoms and Body Image	130	0.818 (0.562-1.190)	118	0.680 (0.408-1.132)
Concerns about Relationships and Emotions	130	0.957 (0.663-1.381)	118	0.873 (0.496-1.538)

Absent End Diastolic Flow

23-28 weeks	80	1.008 (0.910-1.116)	74	1.031 (0.924-1.151)
Concerns about Birth and the Health of the Baby	81	1.054 (0.890-1.248)	75	1.077 (0.901-1.288)
Concerns about Physical Symptoms and Body Image	82	0.941 (0.651-1.361)	76	0.995 (0.657-1.507)
Concerns about Relationships and	80	0.937 (0.625-	74	1.038 (0.618-

Emotions		1.405)		1.741)
29-34 weeks	197	1.082 (1.005-1.166)*	177	1.076 (0.984-1.178)
Concerns about Birth and the Health of the Baby	203	1.216 (1.074-1.376)**	183	1.202 (1.018-1.421)*
Concerns about Physical Symptoms and Body Image	205	0.971 (0.745-1.265)	185	1.098 (0.802-1.501)
Concerns about Relationships and Emotions	203	1.109 (0.863-1.426)	183	1.120 (0.823-1.524)
35-40 weeks	199	N/A	182	N/A
Concerns about Birth and the Health of the Baby	197	N/A	180	N/A
Concerns about Physical Symptoms and Body Image	203	N/A	185	N/A
Concerns about Relationships and Emotions	204	N/A	186	N/A

[¥]Models adjusted for maternal smoking, drinking, ethnicity, BMI, mean arterial pressure, deprivation index score, parity, and age. Adjusted binary logistic regression models for NICU admission also adjusted for prematurity. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$.

Supplementary Table 3: Pregnancy-Specific Stress and Neonatal Outcomes

	Unadjusted Model			Adjusted Model [†]		
	n	OR (95% CI)		n	OR (95% CI)	
Prematurity						
23-28 weeks	80	1.010	(0.944-1.080)	74	1.031	(0.951-1.119)
Concerns about Birth and the Health of the Baby	81	1.068	(0.954-1.196)	75	1.099	(0.957-1.262)
Concerns about Physical Symptoms and Body Image	82	0.855	(0.658-1.111)	76	0.907	(0.659-1.250)
Concerns about Relationships and Emotions	80	1.003	(0.780-1.290)	74	1.052	(0.769-1.440)
29-34 weeks	197	1.027	(0.982-1.075)	177	1.001	(0.950-1.055)
Concerns about Birth and the Health of the Baby	203	1.084	(1.008-1.166)*	183	1.035	(0.950-1.128)
Concerns about Physical Symptoms and Body Image	205	0.955	(0.820-1.111)	185	0.908	(0.760-1.085)
Concerns about Relationships and Emotions	203	1.014	(0.864-1.192)	183	0.986	(0.822-1.182)
35-40 weeks	199	1.016	(0.945-1.093)	182	1.011	(0.932-1.097)
Concerns about Birth and the Health of the Baby	197	1.048	(0.936-1.174)	180	1.061	(0.928-1.213)
Concerns about Physical Symptoms and Body Image	203	1.063	(0.846-1.336)	185	1.070	(0.831-1.379)
Concerns about Relationships and Emotions	204	0.873	(0.632-1.207)	186	0.765	(0.510-1.148)
NICU Admission						
23-28 weeks	80	1.012	(0.949-1.079)	74	1.043	(0.916-1.187)
Concerns about Birth and the Health of the Baby	81	1.037	(0.930-1.156)	75	1.002	(0.813-1.235)
Concerns about Physical Symptoms and Body Image	82	0.942	(0.750-1.183)	76	1.308	(0.830-2.062)
Concerns about Relationships and Emotions	80	1.079	(0.853-1.363)	74	1.304	(0.803-2.117)
29-34 weeks	197	1.038	(0.994-1.083)	177	1.030	(0.960-1.105)
Concerns about Birth and the Health of the Baby	203	1.096	(1.023-1.175)**	183	1.070	(0.951-1.205)
Concerns about Physical Symptoms and Body Image	205	0.947	(0.822-1.092)	185	0.935	(0.740-1.180)
Concerns about Relationships and Emotions	203	1.063	(0.915-1.234)	183	1.094	(0.857-1.397)

35-40 weeks	199	0.969 (0.903-1.040)	182	0.972 (0.887-1.064)
Concerns about Birth and the Health of the Baby	197	1.011 (0.914-1.118)	180	1.034 (0.911-1.174)
Concerns about Physical Symptoms and Body Image	203	0.724 (0.541-0.969)*	185	0.635 (0.435-0.927)*
Concerns about Relationships and Emotions	204	0.866 (0.654-1.147)	186	0.927 (0.669-1.284)

Birthweight < 2,500g

23-28 weeks	80	1.001 (0.945-1.060)	74	0.998 (0.930-1.070)
Concerns about Birth and the Health of the Baby	81	1.041 (0.945-1.147)	75	1.037 (0.923-1.165)
Concerns about Physical Symptoms and Body Image	82	0.841 (0.678-1.045)	76	0.824 (0.644-1.055)
Concerns about Relationships and Emotions	80	1.026 (0.830-1.268)	74	1.041 (0.806-1.344)
29-34 weeks	197	1.030 (0.989-1.072)	177	1.016 (0.970-1.064)
Concerns about Birth and the Health of the Baby	203	1.080 (1.012-1.153)*	183	1.065 (0.985-1.151)
Concerns about Physical Symptoms and Body Image	205	0.981 (0.864-1.115)	185	0.970 (0.837-1.125)
Concerns about Relationships and Emotions	203	0.992 (0.861-1.142)	183	0.959 (0.817-1.126)
35-40 weeks	199	1.013 (0.969-1.058)	182	1.009 (0.960-1.060)
Concerns about Birth and the Health of the Baby	197	1.051 (0.982-1.125)	180	1.047 (0.968-1.133)
Concerns about Physical Symptoms and Body Image	203	0.930 (0.802-1.078)	185	0.958 (0.814-1.127)
Concerns about Relationships and Emotions	204	0.998 (0.851-1.169)	186	0.977 (0.820-1.164)

Composite Adverse Perinatal Outcome

23-28 weeks	80	1.035 (0.938-1.142)	74	1.044 (0.925-1.179)
Concerns about Birth and the Health of the Baby	81	1.046 (0.883-1.239)	75	1.016 (0.842-1.228)
Concerns about Physical Symptoms and Body Image	82	1.076 (0.777-1.490)	76	1.258 (0.814-1.944)
Concerns about Relationships and Emotions	80	1.202 (0.847-1.705)	74	1.496 (0.824-2.716)
29-34 weeks	197	1.013 (0.896-1.144)	177	1.000 (0.859-1.164)

Concerns about Birth and the Health of the Baby	203	0.987 (1.212)	(0.803-	183	0.974 (1.257)	(0.756-
Concerns about Physical Symptoms and Body Image	205	1.137 (1.626)	(0.795-	185	1.009 (1.706)	(0.597-
Concerns about Relationships and Emotions	203	1.065 (1.607)	(0.706-	183	1.102 (1.783)	(0.681-
35-40 weeks	199	1.022 (1.249)	(0.836-	182	1.023 (1.401)	(0.747-
Concerns about Birth and the Health of the Baby	197	1.193 (1.601)	(0.888-	180	1.345 (2.290)	(0.789-
Concerns about Physical Symptoms and Body Image	203	0.270 (1.940)	(0.038-	185	N/A	
Concerns about Relationships and Emotions	204	0.767 (2.209)	(0.267-	186	0.809 (2.330)	(0.281-

[‡]Models adjusted for maternal smoking, drinking, ethnicity, BMI, mean arterial pressure, deprivation index score, parity, and age. Adjusted binary logistic regression models for NICU admission also adjusted for prematurity. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$.